AMENDMENTS TO THE CLAIMS

1-37 **(Canceled)**

38. (Previously Presented) A networking protocol for a network comprising:

a protocol packet, wherein

said protocol packet is sent from a neighbor node to a node,

said neighbor node is a neighbor of said node,

said protocol packet is configured to allow said node to determine topology information, and

said topology information comprises information regarding a topology of at least a portion of said network.

39. (Previously Presented) The networking protocol of claim 38, wherein said protocol packet comprises:

header data; and

command-specific data.

40. (Previously Presented) The networking protocol of claim 39, wherein said header data comprises:

a flush indicator field.

41. (Previously Presented) The networking protocol of claim 39, wherein said header data further comprises:

a terminate path indicator field.

42. (Previously Presented) The networking protocol of claim 39, wherein said header data further comprises:

a commit path indicator field.

43. (Previously Presented) The networking protocol of claim 39, wherein said header data comprises:

a request/response indicator field.

44. (Previously Presented) The networking protocol of claim 43, wherein said header data further comprises:

a negative response indicator field.

45. (Previously Presented) The networking protocol of claim 44, wherein said header data further comprises:

a terminate path indicator field.

46. (Previously Presented) The networking protocol of claim 44, wherein said header data further comprises:

a commit path indicator field.

47. (Previously Presented) The networking protocol of claim 44, wherein said header data comprises:

a flush indicator field.

48. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a initialization packet.

49. (Previously Presented) The networking protocol of claim 48, wherein said command-specific data comprises:

information regarding a link between said node and said neighbor node.

50. (Previously Presented) The networking protocol of claim 48, wherein said command-specific data comprises:

a link cost field.

51. (Previously Presented) The networking protocol of claim 50, wherein said command-specific data further comprises:

a quality of service 3 capacity field; and

a quality of service n capacity field.

52. (Previously Presented) The networking protocol of claim 50, wherein said command-specific data further comprises:

a hello interval field; and

a hello dead interval field.

53. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a hello packet.

54. (Previously Presented) The networking protocol of claim 53, wherein said command-specific data comprises:

a link state advertisement count field.

55. (Previously Presented) The networking protocol of claim 53, wherein said command-specific data further comprises:

an advertising node field;

an instance identifier field;

a hop count field; and

a neighbor count field.

56. (Previously Presented) The networking protocol of claim 53, wherein said command-specific data further comprises:

a neighbor field; and

a link cost field.

57. (Previously Presented) The networking protocol of claim 53, wherein said command-specific data further comprises:

a quality of service 3 capacity field; and

a quality of service n capacity field.

58. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a restore path packet.

59. (Previously Presented) The networking protocol of claim 58, wherein said command-specific data comprises:

a virtual path identifier field.

60. (Previously Presented) The networking protocol of claim 59, wherein said command-specific data comprises:

a path length field.

61. (Previously Presented) The networking protocol of claim 59, wherein said command-specific data comprises:

a path index field; and

a path array.

62. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a create path packet.

63. (Previously Presented) The networking protocol of claim 62, wherein said command-specific data comprises:

a virtual path identifier field;

a path length field;

a path index field; and

a path array.

64. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a delete path packet.

65. (Previously Presented) The networking protocol of claim 64, wherein said command-specific data comprises:

a virtual path identifier field;

a path length field;

a path index field; and

a path array.

66. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a test path packet.

67. (Previously Presented) The networking protocol of claim 66, wherein said command-specific data comprises:

a virtual path identifier field;

a path length field;

a path index field; and

a path array.

68. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a get link state advertisement packet.

69. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a link down packet.

70. (Previously Presented) The networking protocol of claim 39, wherein said protocol packet is a configure packet.

71-110 **(Canceled)**

111. (Previously Presented) A method of processing a get link state advertisement packet comprising:

receiving said get link state advertisement packet at a downstream node, wherein

said get link state advertisement packet is sent by a sending node,

said get link state advertisement packet comprises at least one node identifier,

said at least one node identifier identifies a node in a network for which said sending node seeks a link state advertisement, and

said downstream node and said sending node are nodes in said network; and

sending at least one link state advertisement to said node.

112. (Previously Presented) The method of claim 111, further comprising:
sending an acknowledgement to said downstream node.

113. (Previously Presented) The method of claim 111, further comprising:
building a first list from a link state database maintained at said downstream node, wherein
said first list comprises any link state advertisements received from a node other than said sending node, and
said at least one link state advertisement is among said any link state advertisements received from said sending node.

114. (Previously Presented) The method of claim 113, further comprising:
building a second list from said link state database, wherein
said second list comprises any link state advertisements received from said sending node.

115. (Previously Presented) The method of claim 114, further comprising:
sending a get link state advertisement packet to each node corresponding to one of said link state advertisements in said second list.

116. (Previously Presented) The method of claim 114, further comprising:
indicating link state advertisements in said second list are to be deleted.

117. (Previously Presented) The method of claim 116, further comprising:
deleting each one of said link state advertisements in said second list, if an updated link state advertisement is not received within a period of time.

118. (Previously Presented) The method of claim 111, further comprising:
identifying said at least one link state advertisement in a link state database maintained at said downstream node using said at least one node identifier.

119. (Previously Presented) The method of claim 118, further comprising:
building a first list from said link state database, wherein

said first list comprises any link state advertisements received from a node other than said sending node, and

said at least one link state advertisement is among said any link state advertisements received from said sending node.

120. (Previously Presented) The method of claim 119, further comprising:

building a second list from said link state database, wherein

said second list comprises any link state advertisements received from said sending node.

121. (Previously Presented) The method of claim 120, further comprising:

sending a get link state advertisement packet to each node corresponding to one of said link state advertisements in said second list.

122. (Previously Presented) The method of claim 120, further comprising:

indicating link state advertisements in said second list are to be deleted.

123. (Previously Presented) The method of claim 122, further comprising:

deleting each one of said link state advertisements in said second list, if an updated link state advertisement is not received within a period of time.

124. (Previously Presented) A computer system comprising:

a processor;

computer readable medium coupled to said processor; and

computer code, encoded in said computer readable medium, configured to cause said processor to:

receive said get link state advertisement packet at a downstream node, wherein

said get link state advertisement packet is sent by a sending node,

said get link state advertisement packet comprises at least one node identifier,

said at least one node identifier identifies a node in a network for which said sending node seeks a link state advertisement, and

said downstream node and said sending node are nodes in said network; and

send at least one link state advertisement to said node.

125. (Previously Presented) The computer system of claim 124, wherein said computer code is further configured to cause said processor to:

send an acknowledgement to said downstream node.

126. (Previously Presented) The computer system of claim 124, wherein said computer code is further configured to cause said processor to:

build a first list from a link state database maintained at said downstream node, wherein

said first list comprises any link state advertisements received from a node other than said sending node, and

said at least one link state advertisement is among said any link state advertisements received from said sending node.

127. (Previously Presented) The computer system of claim 126, wherein said computer code is further configured to cause said processor to:

build a second list from said link state database, wherein

said second list comprises any link state advertisements received from said sending node.

128. (Previously Presented) The computer system of claim 127, wherein said computer code is further configured to cause said processor to:

send a get link state advertisement packet to each node corresponding to one of said link state advertisements in said second list.

129. (Previously Presented) The computer system of claim 127, wherein said computer code is further configured to cause said processor to:

indicate link state advertisements in said second list are to be deleted.

130. (Previously Presented) The computer system of claim 129, wherein said computer code is further configured to cause said processor to:

delete each one of said link state advertisements in said second list, if an updated link state advertisement is not received within a period of time.

131. (Previously Presented) The computer system of claim 124, wherein said computer code is further configured to cause said processor to:

identify said at least one link state advertisement in a link state database maintained at said downstream node using said at least one node identifier.

132. (Previously Presented) The computer system of claim 131, wherein said computer code is further configured to cause said processor to:

build a first list from said link state database, wherein

said first list comprises any link state advertisements received from a node other than said sending node, and

said at least one link state advertisement is among said any link state advertisements received from said sending node.

133. (Previously Presented) The computer system of claim 132, wherein said computer code is further configured to cause said processor to:

build a second list from said link state database, wherein

said second list comprises any link state advertisements received from said sending node.

134. (Previously Presented) The computer system of claim 133, wherein said computer code is further configured to cause said processor to:

send a get link state advertisement packet to each node corresponding to one of said link state advertisements in said second list.

135. (Previously Presented) The computer system of claim 133, wherein said computer code is further configured to cause said processor to:

indicate link state advertisements in said second list are to be deleted.

136. (Previously Presented) The computer system of claim 135, wherein said computer code is further configured to cause said processor to:

deleting each one of said link state advertisements in said second list, if an updated link state advertisement is not received within a period of time.

137. (Previously Presented) A computer program product encoded in computer readable media, said computer program product comprising:

a first set of instructions, executable on a computer system, configured to receive said get link state advertisement packet at a downstream node, wherein

said get link state advertisement packet is sent by a sending node,

said get link state advertisement packet comprises at least one node identifier,

said at least one node identifier identifies a node in a network for which said sending node seeks a link state advertisement, and

said downstream node and said sending node are nodes in said network; and

a second set of instructions, executable on said computer system, configured to send at least one link state advertisement to said node.

138. (Previously Presented) The computer program product of claim 137, further comprising:

a third set of instructions, executable on said computer system, configured to send an acknowledgement to said downstream node.

139. (Previously Presented) The computer program product of claim 137, further comprising:

a third set of instructions, executable on said computer system, configured to

build a first list from a link state database maintained at said downstream node, wherein

said first list comprises any link state advertisements received from a node other than said sending node, and

said at least one link state advertisement is among said any link state advertisements received from said sending node.

140. (Previously Presented) The computer program product of claim 139, further comprising:

a fourth set of instructions, executable on said computer system, configured to

build a second list from said link state database, wherein

said second list comprises any link state advertisements received from said sending node.

141. (Previously Presented) The computer program product of claim 140, further comprising:

a fifth set of instructions, executable on said computer system, configured to send a get link state advertisement packet to each node corresponding to one of said link state advertisements in said second list.

142. (Previously Presented) The computer program product of claim 140, further comprising:

a fifth set of instructions, executable on said computer system, configured to

indicate link state advertisements in said second list are to be deleted.

143. (Previously Presented) The computer program product of claim 142, further comprising:

a sixth set of instructions, executable on said computer system, configured to

delete each one of said link state advertisements in said second list, if an updated link state advertisement is not received within a period of time.

144. (Previously Presented) The computer program product of claim 137, further comprising:

a third set of instructions, executable on said computer system, configured to identify said at least one link state advertisement in a link state database maintained at said downstream node using said at least one node identifier.

145. (Previously Presented) The computer program product of claim 144, further comprising:

a fourth set of instructions, executable on said computer system, configured to build a first list from said link state database, wherein

said first list comprises any link state advertisements received from a node other than said sending node, and

said at least one link state advertisement is among said any link state advertisements received from said sending node.

146. (Previously Presented) The computer program product of claim 145, further comprising:

a fifth set of instructions, executable on said computer system, configured to build a second list from said link state database, wherein

said second list comprises any link state advertisements received from said sending node.

147. (Previously Presented) The computer program product of claim 146, further comprising:

a sixth set of instructions, executable on said computer system, configured to send a get link state advertisement packet to each node corresponding to one of said link state advertisements in said second list.

148. (Previously Presented) The computer program product of claim 146, further comprising:

a sixth set of instructions, executable on said computer system, configured to indicate link state advertisements in said second list are to be deleted.

149. (Previously Presented) The computer program product of claim 148, further comprising:

a seventh set of instructions, executable on said computer system, configured to

deleting each one of said link state advertisements in said second list, if an updated link state advertisement is not received within a period of time.

150. (Previously Presented) An apparatus for processing a get link state advertisement packet comprising:

means for receiving said get link state advertisement packet at a downstream node, wherein

said get link state advertisement packet is sent by a sending node,

said get link state advertisement packet comprises at least one node identifier,

said at least one node identifier identifies a node in a network for which said sending node seeks a link state advertisement, and

said downstream node and said sending node are nodes in said network; and

means for sending at least one link state advertisement to said node.

151. (Previously Presented) The apparatus of claim 150, further comprising:

means for sending an acknowledgement to said downstream node.

152. (Previously Presented) The apparatus of claim 150, further comprising:

means for building a first list from a link state database maintained at said downstream node, wherein

said first list comprises any link state advertisements received from a node other than said sending node, and

said at least one link state advertisement is among said any link state advertisements received from said sending node.

153. (Previously Presented) The apparatus of claim 152, further comprising:

means for building a second list from said link state database, wherein

said second list comprises any link state advertisements received from said sending node.

154. (Previously Presented) The apparatus of claim 153, further comprising:
means for sending a get link state advertisement packet to each node corresponding to one of said link state advertisements in said second list.

155. (Previously Presented) The apparatus of claim 153, further comprising:
means for indicating link state advertisements in said second list are to be deleted.

156. (Previously Presented) The apparatus of claim 155, further comprising:
means for deleting each one of said link state advertisements in said second list, if an updated link state advertisement is not received within a period of time.

157. (Previously Presented) The apparatus of claim 150, further comprising:
means for identifying said at least one link state advertisement in a link state database maintained at said downstream node using said at least one node identifier.

158. (Previously Presented) The apparatus of claim 157, further comprising:
means for building a first list from said link state database, wherein
said first list comprises any link state advertisements received from a node other than said sending node, and
said at least one link state advertisement is among said any link state advertisements received from said sending node.

159. (Previously Presented) The apparatus of claim 158, further comprising:
means for building a second list from said link state database, wherein
said second list comprises any link state advertisements received from said sending node.

160. (Previously Presented) The apparatus of claim 159, further comprising:

means for sending a get link state advertisement packet to each node corresponding to one of said link state advertisements in said second list.

161. (Previously Presented) The apparatus of claim 159, further comprising:
means for indicating link state advertisements in said second list are to be deleted.

162. (Previously Presented) The apparatus of claim 161, further comprising:
means for deleting each one of said link state advertisements in said second list, if an updated link state advertisement is not received within a period of time.

163. (Previously Presented) A method of processing a get link state advertisement packet comprising:
receiving a hello packet at a downstream node, wherein said hello packet comprises a link state advertisement; and
processing said link state advertisement.

164. (Previously Presented) The method of claim 163, further comprising:
sending an acknowledgement to said downstream node, wherein said acknowledgement acknowledges all link state advertisements in said hello packet.

165. (Previously Presented) The method of claim 163, wherein said processing comprises:
determining if said link state advertisement corresponds to an entry in a link state database maintained at said downstream node.

166. (Previously Presented) The method of claim 165, wherein said processing further comprises:
if said link state advertisement does not correspond to an entry in a link state database maintained at said downstream node,
adding said link state advertisement to said link state database.

167. (Previously Presented) The method of claim 166, wherein said processing further comprises:

if said link state advertisement corresponds to an entry in a link state database maintained at said downstream node,

determining if a node originating said link state advertisement is a node originating a link state advertisement corresponding to said entry in said link state database.

168. (Previously Presented) The method of claim 167, wherein said processing further comprises:

if said node originating said link state advertisement is not said node originating said link state advertisement corresponding to said entry in said link state database,

adding said link state advertisement to said link state database.

169. (Previously Presented) The method of claim 167, wherein said processing further comprises:

if said node originating said link state advertisement is said node originating said link state advertisement corresponding to said entry in said link state database,

determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database.

170. (Previously Presented) The method of claim 169, wherein said processing further comprises:

if said link state advertisement is not more recent than said link state advertisement corresponding to said entry in said link state database,

discarding said link state advertisement.

171. (Previously Presented) The method of claim 169, wherein said processing further comprises:

if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database,

adding said link state advertisement to said link state database.

172. (Previously Presented) The method of claim 169, wherein said determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database comprises:

determining if a link state identifier of said link state advertisement is the same as a link state identifier of said link state advertisement corresponding to said entry in said link state database.

173. (Previously Presented) The method of claim 172, wherein said determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database further comprises:

if said link state identifier of said link state advertisement is not the same as said link state identifier of said link state advertisement corresponding to said entry in said link state database,

indicating a one of said link state advertisement and said link state advertisement corresponding to said entry in said link state database having a higher link state identifier is more recent.

174. (Previously Presented) The method of claim 172, wherein said determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database further comprises:

if said link state identifier of said link state advertisement is the same as said link state identifier of said link state advertisement corresponding to said entry in said link state database,

determining if a hop count of said link state advertisement is the same as a hop count of said link state advertisement corresponding to said entry in said link state database.

175. (Previously Presented) The method of claim 174, wherein said determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database further comprises:

if said hop count of said link state advertisement is the same as said hop count of said link state advertisement corresponding to said entry in said link state database,

indicating that said link state advertisement and said link state advertisement corresponding to said entry in said link state database are the same.

176. (Previously Presented) The method of claim 174, wherein said determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database further comprises:

if said hop count of said link state advertisement is not the same as said hop count of said link state advertisement corresponding to said entry in said link state database,

indicating that the one of said link state advertisement and said link state advertisement corresponding to said entry in said link state database having a lower hop count is more recent.

177. (Previously Presented) A computer system comprising:

a processor;

computer readable medium coupled to said processor; and

computer code, encoded in said computer readable medium, configured to cause said processor to:

receive a hello packet at a downstream node, wherein said hello packet comprises a link state advertisement; and

process said link state advertisement.

178. (Previously Presented) The computer system of claim 177, wherein said computer code is further configured to cause said processor to:

send an acknowledgement to said downstream node, wherein said acknowledgement acknowledges all link state advertisements in said hello packet.

179. (Previously Presented) The computer system of claim 177, wherein said computer code configured to cause said processor to process said link state advertisement is further configured to cause said processor to:

determine if said link state advertisement corresponds to an entry in a link state database maintained at said downstream node.

180. (Previously Presented) The computer system of claim 179, wherein said computer code configured to cause said processor to process said link state advertisement is further configured to cause said processor to:

if said link state advertisement does not correspond to an entry in a link state database maintained at said downstream node,

add said link state advertisement to said link state database.

181. (Previously Presented) The computer system of claim 180, wherein said computer code configured to cause said processor to process said link state advertisement is further configured to cause said processor to:

if said link state advertisement corresponds to an entry in a link state database maintained at said downstream node,

determine if a node originating said link state advertisement is a node originating a link state advertisement corresponding to said entry in said link state database.

182. (Previously Presented) The computer system of claim 181, wherein said computer code configured to cause said processor to process said link state advertisement is further configured to cause said processor to:

if said node originating said link state advertisement is not said node originating said link state advertisement corresponding to said entry in said link state database,

add said link state advertisement to said link state database.

183. (Previously Presented) The computer system of claim 181, wherein said computer code configured to cause said processor to process said link state advertisement is further configured to cause said processor to:

if said node originating said link state advertisement is said node originating said link state advertisement corresponding to said entry in said link state database,

determine if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database.

184. (Previously Presented) The computer system of claim 183, wherein said computer code configured to cause said processor to process said link state advertisement is further configured to cause said processor to:

if said link state advertisement is not more recent than said link state advertisement corresponding to said entry in said link state database, discard said link state advertisement.

185. (Previously Presented) The computer system of claim 183, wherein said computer code configured to cause said processor to process said link state advertisement is further configured to cause said processor to:

if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database,

add said link state advertisement to said link state database.

186. (Previously Presented) The computer system of claim 183, wherein said computer code configured to cause said processor to process said link state advertisement is further configured to cause said processor to:

determine if a link state identifier of said link state advertisement is the same as a link state identifier of said link state advertisement corresponding to said entry in said link state database.

187. (Previously Presented) The computer system of claim 186, wherein said computer code configured to cause said processor to determine if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database is further configured to cause said processor to:

if said link state identifier of said link state advertisement is not the same as said link state identifier of said link state advertisement corresponding to said entry in said link state database,

indicate a one of said link state advertisement and said link state advertisement corresponding to said entry in said link state database having a higher link state identifier is more recent.

188. (Previously Presented) The computer system of claim 186, wherein said computer code configured to cause said processor to determine if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database is further configured to cause said processor to:

if said link state identifier of said link state advertisement is the same as said link state identifier of said link state advertisement corresponding to said entry in said link state database,

determine if a hop count of said link state advertisement is the same as a hop count of said link state advertisement corresponding to said entry in said link state database.

189. (Previously Presented) The computer system of claim 188, wherein said computer code configured to cause said processor to determine if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database is further configured to cause said processor to:

if said hop count of said link state advertisement is the same as said hop count of said link state advertisement corresponding to said entry in said link state database,

indicate that said link state advertisement and said link state advertisement corresponding to said entry in said link state database are the same.

190. (Previously Presented) The computer system of claim 188, wherein said computer code configured to cause said processor to determine if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database is further configured to cause said processor to:

if said hop count of said link state advertisement is not the same as said hop count of said link state advertisement corresponding to said entry in said link state database,

indicating that the one of said link state advertisement and said link state advertisement corresponding to said entry in said link state database having a lower hop count is more recent.

191. (Previously Presented) A computer program product encoded in computer readable media, said computer program product comprising:

a first set of instructions, executable on a computer system, configured to receive a hello packet at a downstream node, wherein said hello packet comprises a link state advertisement; and

a second set of instructions, executable on said computer system, configured to process said link state advertisement.

192. (Previously Presented) The computer program product of claim 191, further comprising:

a third set of instructions, executable on said computer system, configured to send an acknowledgement to said downstream node, wherein said acknowledgement acknowledges all link state advertisements in said hello packet.

193. (Previously Presented) The computer program product of claim 191, wherein said second set of instructions comprises:

a first sub-set of instructions, executable on said computer system, configured to determine if said link state advertisement corresponds to an entry in a link state database maintained at said downstream node.

194. (Previously Presented) The computer program product of claim 193, wherein said second set of instructions further comprises:

a second sub-set of instructions, executable on said computer system, configured to, if said link state advertisement does not correspond to an entry in a link state database maintained at said downstream node,

add said link state advertisement to said link state database.

195. (Previously Presented) The computer program product of claim 194, wherein said second set of instructions further comprises:

a third sub-set of instructions, executable on said computer system, configured to, if said link state advertisement corresponds to an entry in a link state database maintained at said downstream node,

determine if a node originating said link state advertisement is a node originating a link state advertisement corresponding to said entry in said link state database.

196. (Previously Presented) The computer program product of claim 195, wherein said second set of instructions further comprises:

a fourth sub-set of instructions, executable on said computer system, configured to, if said node originating said link state advertisement is not said node originating said link state advertisement corresponding to said entry in said link state database,

add said link state advertisement to said link state database.

197. (Previously Presented) The computer program product of claim 195, wherein said second set of instructions further comprises:

a fourth sub-set of instructions, executable on said computer system, configured to, if said node originating said link state advertisement is said node originating said link state advertisement corresponding to said entry in said link state database,

determine if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database.

198. (Previously Presented) The computer program product of claim 197, wherein said second set of instructions further comprises:

a fifth sub-set of instructions, executable on said computer system, configured to, if said link state advertisement is not more recent than said link state advertisement corresponding to said entry in said link state database, discard said link state advertisement.

199. (Previously Presented) The computer program product of claim 197, wherein said second set of instructions further comprises:

a sixth sub-set of instructions, executable on said computer system, configured to, if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database, add said link state advertisement to said link state database.

200. (Previously Presented) The computer program product of claim 197, wherein said second set of instructions further comprises:

a sixth sub-set of instructions, executable on said computer system, configured to determine if a link state identifier of said link state advertisement is the same as a link state identifier of said link state advertisement corresponding to said entry in said link state database.

201. (Previously Presented) The computer program product of claim 200, wherein said fourth sub-set of instructions further comprises:

a first sub-sub-set of instructions, executable on said computer system, configured to, if said link state identifier of said link state advertisement is not the same as said link state identifier of said link state advertisement corresponding to said entry in said link state database,

indicate a one of said link state advertisement and said link state advertisement corresponding to said entry in said link state database having a higher link state identifier is more recent.

202. (Previously Presented) The computer program product of claim 200, wherein said fourth sub-set of instructions further comprises:

a first sub-sub-set of instructions, executable on said computer system, configured to, if said link state identifier of said link state advertisement is the same as said link state identifier of said link state advertisement corresponding to said entry in said link state database,

determine if a hop count of said link state advertisement is the same as a hop count of said link state advertisement corresponding to said entry in said link state database.

203. (Previously Presented) The computer program product of claim 202, wherein said fourth sub-set of instructions further comprises:

a second sub-sub-set of instructions, executable on said computer system, configured to, if said hop count of said link state advertisement is the same as said hop count of said link state advertisement corresponding to said entry in said link state database,

indicate that said link state advertisement and said link state advertisement corresponding to said entry in said link state database are the same.

204. (Previously Presented) The computer program product of claim 202, wherein said fourth sub-set of instructions further comprises:

a second sub-sub-set of instructions, executable on said computer system, configured to, if said hop count of said link state advertisement is not the same as said hop count of said link state advertisement corresponding to said entry in said link state database,

indicating that the one of said link state advertisement and said link state advertisement corresponding to said entry in said link state database having a lower hop count is more recent.

205. (Previously Presented) An apparatus for processing a get link state advertisement packet comprising:

means for receiving a hello packet at a downstream node, wherein said hello packet comprises a link state advertisement; and

means for processing said link state advertisement.

206. (Previously Presented) The apparatus of claim 205, further comprising:

means for sending an acknowledgement to said downstream node, wherein said acknowledgement acknowledges all link state advertisements in said hello packet.

207. (Previously Presented) The apparatus of claim 205, wherein said means for processing comprises:

means for determining if said link state advertisement corresponds to an entry in a link state database maintained at said downstream node.

208. (Previously Presented) The apparatus of claim 207, wherein said means for processing further comprises:

means for adding said link state advertisement to a link state database, if said link state advertisement does not correspond to an entry in a link state database maintained at said downstream node.

209. (Previously Presented) The apparatus of claim 208, wherein said means for processing further comprises:

means for determining if a node originating said link state advertisement is a node originating a link state advertisement corresponding to an entry in a link state database, if said link state advertisement corresponds to said entry in said link state database maintained at said downstream node.

210. (Previously Presented) The apparatus of claim 209, wherein said means for processing further comprises:

means for adding said link state advertisement to said link state database, if said node originating said link state advertisement is not said node originating said link state advertisement corresponding to said entry in said link state database.

211. (Previously Presented) The apparatus of claim 209, wherein said means for processing further comprises:

means for determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database, if said node originating said link state advertisement is said node originating said link state advertisement corresponding to said entry in said link state database.

212. (Previously Presented) The apparatus of claim 211, wherein said means for processing further comprises:

means for discarding said link state advertisement, if said link state advertisement is not more recent than said link state advertisement corresponding to said entry in said link state database.

213. (Previously Presented) The apparatus of claim 211, wherein said menas for processing further comprises:

means for adding said link state advertisement to said link state database, if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database.

214. (Previously Presented) The apparatus of claim 211, wherein said means for determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database comprises:

means for determining if a link state identifier of said link state advertisement is the same as a link state identifier of said link state advertisement corresponding to said entry in said link state database.

215. (Previously Presented) The apparatus of claim 214, wherein said means for determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database further comprises:

means for indicating a one of said link state advertisement and said link state advertisement corresponding to said entry in said link state database having a higher link state identifier is more recent, if said link state identifier of said link state advertisement is not the same as said link state identifier of said link state advertisement corresponding to said entry in said link state database.

216. (Previously Presented) The apparatus of claim 214, wherein said means for determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database further comprises:

means for determining if a hop count of said link state advertisement is the same as a hop count of said link state advertisement corresponding to said entry in said link state database, if said link state identifier of said link state advertisement is the same as said link state identifier of said link state advertisement corresponding to said entry in said link state database.

217. (Previously Presented) The apparatus of claim 216, wherein said means for determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database further comprises:

means for indicating that said link state advertisement and said link state advertisement corresponding to said entry in said link state database are the same, if said hop count of said link state advertisement is the same as said hop count of said link state advertisement corresponding to said entry in said link state database.

218. (Previously Presented) The apparatus of claim 216, wherein said means for determining if said link state advertisement is more recent than said link state advertisement corresponding to said entry in said link state database further comprises:

means for indicating that the one of said link state advertisement and said link state advertisement corresponding to said entry in said link state database having a lower hop count is more recent, if said hop count of said link state advertisement is not the same as said hop count of said link state advertisement corresponding to said entry in said link state database.